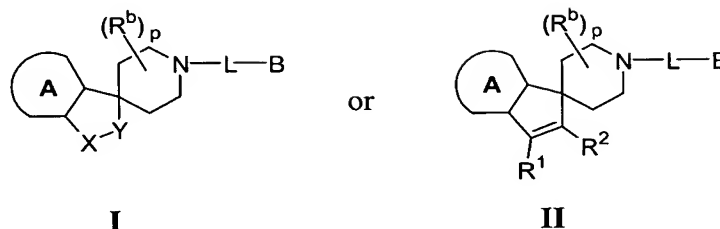


WHAT IS CLAIMED IS:

1. A compound of formula:



or a pharmaceutically acceptable salt, hydrate, solvate or prodrug thereof,
wherein

A represents a substituted or unsubstituted ring selected from the group consisting of an aromatic ring, a 5- or 6-membered heteroaromatic ring, a 5- or 6-membered cycloalkane ring and a 5- or 6-membered heterocycloalkane ring;

B is selected from the group consisting of cyclo(C₅-C₈)alkyl, heterocyclo(C₅-C₈)alkyl, cyclo(C₅-C₈)alkenyl, heterocyclo(C₅-C₈)alkenyl, aryl and heteroaryl;

L is (C₁-C₄)alkylene;

X and Y are independently a divalent linkage selected from the group consisting of (C₁-C₂)alkylene, (C₁-C₂)alkylene—OR³, (C₁-C₂)alkylene—N(R³)COR⁴, (C₁-C₂)alkylene—C(O)NR³R⁴, (C₁-C₂)alkylene—N(R³)CO₂R⁴, (C₁-C₂)alkylene—N(R³)C(O)N(R⁴)R⁵, (C₁-C₂)alkylene—C(O), O, C(O), N(R³), C(O)N(R³), S(O)_k and SO₂N(R³);

R¹ and R² are independently selected from the group consisting of H, (C₁-C₄)alkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, (C₁-C₈)heteroalkyl, aryl, aryl(C₁-C₄)alkyl, NR⁶C(O)R⁵, C(O)R⁵ and NR⁵C(O)NR⁶;

each R^b is selected from the group consisting of (C₁-C₄)alkyl, aryl, OR⁷, C(O)R⁷ and C(O)NR⁷R⁸;

R³ and R⁴ are independently selected from the group consisting of H, (C₁-C₈)alkyl, hetero(C₁-C₈)alkyl, aryl, aryl(C₁-C₄)alkyl, C(O)R', CO₂R' and C(O)NR'R'';

R⁵, R⁶, R⁷ and R⁸ are independently selected from the group consisting of H, (C₁-C₈)alkyl, C(O)R^{'''}, CO₂R^{'''}, aryl and aryl(C₁-C₄)alkyl;

optionally, R⁷ and R⁸ may be combined with the nitrogen to which each

is attached to form a 5-, 6- or 7-membered ring;

R' , R'' and R''' are independently selected from the group consisting of H, $(C_1-C_8)alkyl$, aryl and $aryl(C_1-C_4)alkyl$;

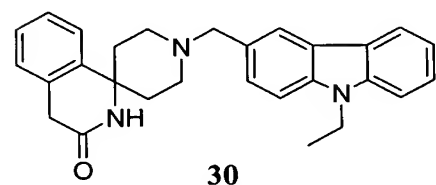
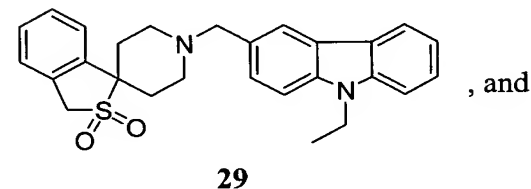
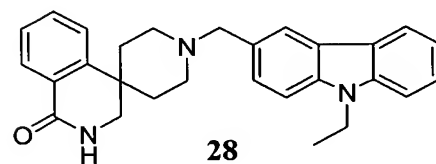
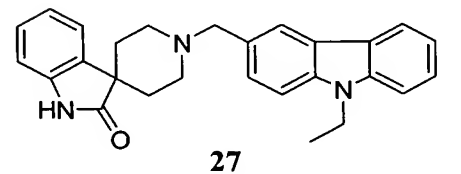
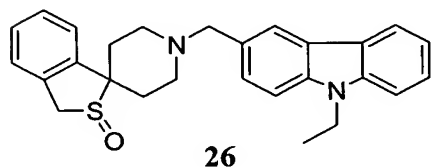
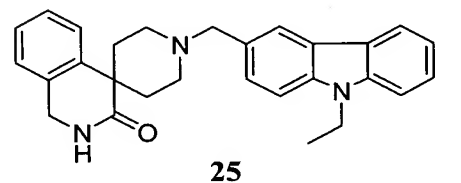
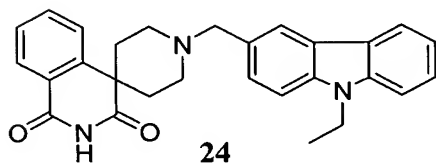
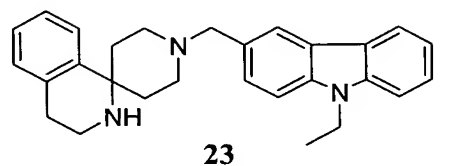
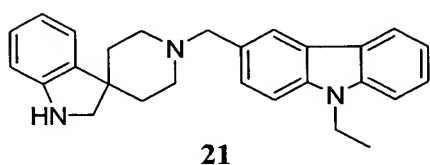
the subscript p is an integer of from 0 to 4; and

the subscript k is an integer of from 0 to 2;

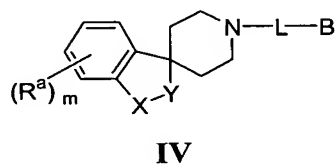
with the proviso that X and Y are not both O, $N(R^3)$, $S(O)_k$ or $SO_2N(R^3)$.

2. The compound of Claim 1, wherein the subscript p is 0.
3. The compound of Claim 1, wherein B is phenyl or naphthyl.
4. The compound of Claim 1, wherein B is selected from the group consisting of pyrrolyl, pyrazolyl, imidazolyl, pyrazinyl, oxazolyl, isoxazolyl, thiazolyl, furyl, thienyl, pyridyl, pyrimidyl, benzothiazolyl, purinyl, benzimidazolyl, indolyl, carbazolyl, indazolyl, carbolinyl, dibenzofuryl, dibenzothienyl, phenoxazinyl, phenothiazinyl, phenoxathiinyl, isoquinolyl, quinoxalinyl and quinolyl.
5. The compound of Claim 1, wherein B contains from 1 to 3 nitrogen atoms.
6. The compound of Claim 5, wherein B is selected from the group consisting of indolyl, carbazolyl and carbolinyl.
7. The compound of Claim 6, wherein B is 3-carbazolyl.
8. The compound of Claim 6, wherein B is 5-indolyl.
9. The compound of Claim 1, wherein **A** represents benzene, cyclohexane or cyclohexene.
10. The compound of Claim 1, wherein **A** represents benzene and B is 3-carbazolyl.

11. The compound of Claim 1, having a formula selected from the group consisting of:



12. The compound of Claim 1, having the formula (IV):



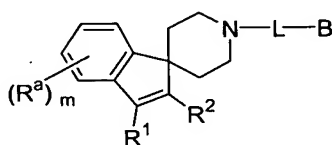
wherein:

each R^a is independently selected from the group consisting of halogen, halo(C_1 - C_4)alkyl, (C_1 - C_4)alkoxy, aryl(C_1 - C_4)alkyl, $OC(O)R^{17}$, $NR^{17}R^{18}$, SR^{17} , cyano, nitro, CO_2R^{17} , $CONR^{17}R^{18}$, $C(O)R^{17}$, $OC(O)NR^{17}R^{18}$, $NR^{18}C(O)R^{17}$, $NR^{18}CO_2R^{17}$, $NR^{19}C(O)NR^{17}R^{18}$, $S(O)_kR^{17}$, $S(O)_kNR^{17}R^{18}$, N_3 ,

(C₄-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, aryl and heteroaryl;

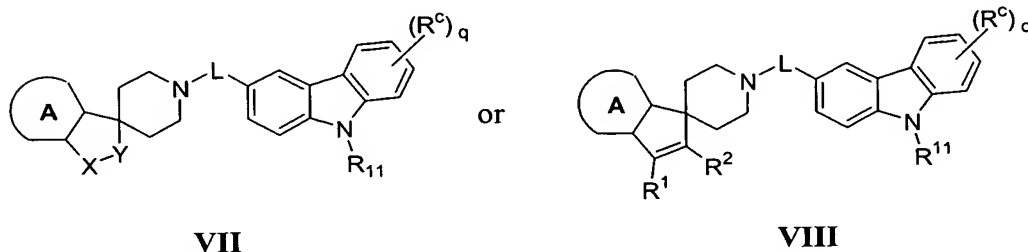
R¹⁷, R¹⁸ and R¹⁹ are independently selected from the group consisting of H, (C₁-C₈)alkyl, (C₁-C₈)heteroalkyl, aryl(C₁-C₄)alkyl and aryl; and the subscript m is an integer of from 0 to 4.

13. The compound of Claim 12, wherein X or Y is (C₁-C₂)alkylene—OH.
14. The compound of Claim 12, wherein Y is CH—OH.
15. The compound of Claim 12, wherein X is (C₁-C₂)alkylene—N(R³)COR⁴.
16. The compound of Claim 12, wherein X is CH—N(R³)COR⁴ and Y is CH—OH.
17. The compound of Claim 12, wherein X is N(R³) and Y is C(O).
18. The compound of Claim 12, wherein X is (C₁-C₂)alkylene, N(R³), C(O)N(R³) or S(O)_k and Y is (C₁-C₂)alkylene.
19. The compound of Claim 12, wherein X is (C₁-C₂)alkylene and Y is C(O), N(R³), C(O)N(R³) or S(O)_k.
20. The compound of Claim 1 having the formula (V):



V

21. The compound of Claim 20, wherein R¹ and R² are H.
22. The compound of Claim 1, having the formula:



wherein

R^{11} is selected from the group consisting of H, (C₁-C₄)alkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, (C₁-C₈)heteroalkyl, aryl, aryl(C₁-C₄)alkyl, heteroaryl, heteroaryl(C₁-C₄)alkyl, (C₃-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, (C₃-C₈)cycloalkyl-alkyl, (C₃-C₈)cycloheteroalkyl, (C₃-C₈)cycloheteroalkyl-alkyl, C(O)R¹², CO₂R¹², C(O)NR¹²R¹³, S(O)_kR¹² and S(O)_kNR¹²R¹³;

each R^c is independently selected from the group consisting of (C₁-C₈)alkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, (C₁-C₈)heteroalkyl, halo(C₁-C₈)alkyl, halogen, CN, NO₂, OR¹⁴, SR¹⁴, NR¹⁴R¹⁵, (C₃-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, (C₃-C₈)cycloalkyl-alkyl, (C₃-C₈)cycloheteroalkyl, (C₃-C₈)cycloheteroalkyl-alkyl, C(O)R¹⁴, CO₂R¹⁴, C(O)NR¹⁴R¹⁵, aryl, aryl(C₁-C₄)alkyl, heteroaryl, heteroaryl(C₁-C₄)alkyl, S(O)_kR¹⁴, S(O)_kNR¹⁴R¹⁵, N(R¹⁵)S(O)_kR¹⁴, OC(O)R¹⁴, OCO₂R¹⁴, OC(O)NR¹⁴R¹⁵, N(R¹⁶)C(O)NR¹⁴R¹⁵, N(R¹⁵)C(O)R¹⁴ and N(R¹⁵)CO₂R¹⁴;

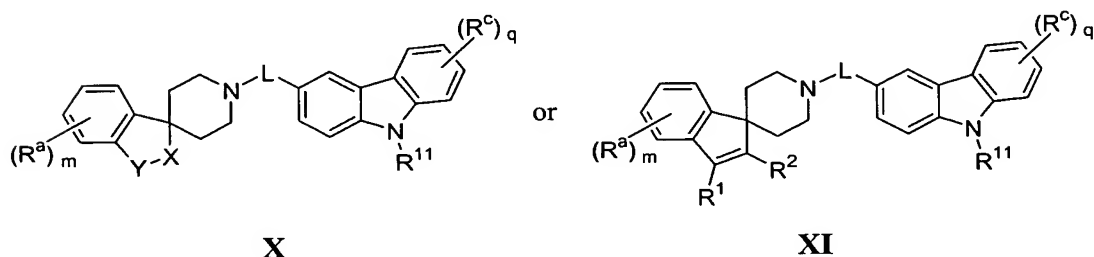
optionally, any two adjacent R^c groups may be combined to form a fused aryl ring or (C₅-C₈)cycloalkyl ring;

R¹², R¹³, R¹⁴, R¹⁵ and R¹⁶ are independently selected from the group consisting of H, (C₁-C₈)alkyl, (C₁-C₈)heteroalkyl, aryl(C₁-C₄)alkyl and aryl;

the subscript q is an integer of from 0 to 7; and

the subscript k is an integer of from 1 to 2.

23. The compound of Claim 22, having the formula:



wherein

each R^a is independently selected from the group consisting of halogen, halo(C₁-C₄)alkyl, (C₁-C₄)alkoxy, aryl(C₁-C₄)alkyl, OC(O)R¹⁷, NR¹⁷R¹⁸, SR¹⁷, cyano, nitro, CO₂R¹⁷, CONR¹⁷R¹⁸, C(O)R¹⁷, OC(O)NR¹⁷R¹⁸, NR¹⁸C(O)R¹⁷,

$\text{NR}^{18}\text{CO}_2\text{R}^{17}$, $\text{NR}^{19}\text{C}(\text{O})\text{NR}^{17}\text{R}^{18}$, $\text{S}(\text{O})_k\text{R}^{17}$, $\text{S}(\text{O})_k\text{NR}^{17}\text{R}^{18}$, N_3 ,

$(\text{C}_4\text{-C}_8)\text{cycloalkyl}$, $(\text{C}_5\text{-C}_8)\text{cycloalkenyl}$, aryl and heteroaryl;

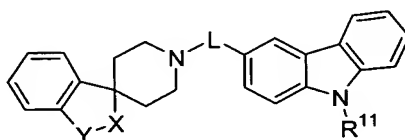
R^{17} , R^{18} and R^{19} are independently selected from the group consisting of H, $(\text{C}_1\text{-C}_8)\text{alkyl}$, $(\text{C}_1\text{-C}_8)\text{heteroalkyl}$, $\text{aryl}(\text{C}_1\text{-C}_4)\text{alkyl}$ and aryl;

the subscript m is an integer of from 0 to 4; and

each subscript k is an integer of from 1 to 2.

24. The compound of any one of Claims 1, 12, 20 and 23, wherein L is methylene.

25. The compound of Claim 23, having the formula (**Xa**):



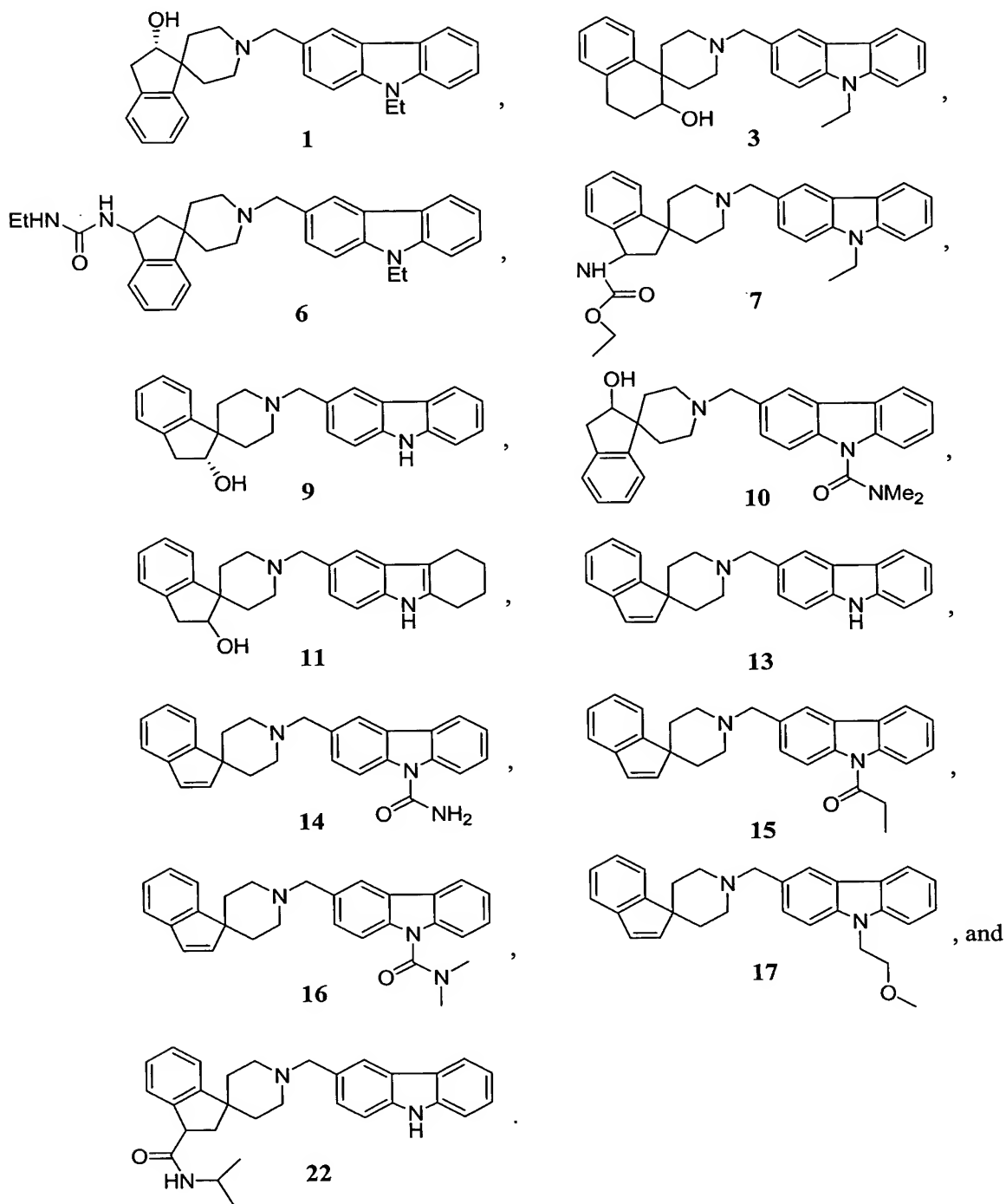
Xa

wherein

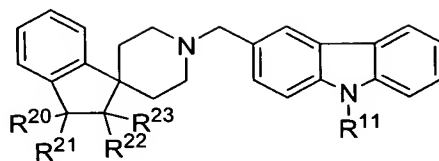
L is methylene; and

X and Y are independently selected from $(\text{C}_1\text{-C}_2)\text{alkylene}$, $(\text{C}_1\text{-C}_2)\text{alkylene-OR}^3$, $(\text{C}_1\text{-C}_2)\text{alkylene-N}(\text{R}^3)\text{COR}^4$, $(\text{C}_1\text{-C}_2)\text{alkylene-C}(\text{O})\text{NR}^3\text{R}^4$ and $(\text{C}_1\text{-C}_2)\text{alkylene-N}(\text{R}^3)\text{C}(\text{O})\text{N}(\text{R}^4)\text{R}^5$.

26. The compound of Claim 25, having a formula selected from the group consisting of:



27. A compound of formula:



VII

or a pharmaceutically acceptable salt, hydrate, solvate or prodrug thereof, wherein

R^{20} and R^{23} independently represent H or OR^3 ;

R^{21} and R^{22} independently represent H, OR^3 , $N(R^3)COR^4$, $C(O)NR^3R^4$, $N(R^3)CO_2R^4$, $N(R^3)C(O)N(R^4)R^5$, $N(R^3)R^4$, $C(O)N(R^3)R^4$, $N(R^3)C(O)R^4$, $(CH_2)C(O)N(R^3)(R^4)$, $(CH_2)CO_2R^3$, or (C_1-C_4) alkyl;

R^{11} represents H, (C_1-C_4) alkyl, (C_2-C_8) alkenyl, (C_2-C_8) alkynyl, (C_1-C_8) heteroalkyl, aryl, aryl (C_1-C_4) alkyl, heteroaryl, heteroaryl (C_1-C_4) alkyl, (C_3-C_8) cycloalkyl, (C_5-C_8) cycloalkenyl, (C_3-C_8) cycloalkyl-alkyl, (C_3-C_8) cycloheteroalkyl, (C_3-C_8) cycloheteroalkyl-alkyl, $C(O)R^{12}$, CO_2R^{12} , $C(O)NR^{12}R^{13}$, $S(O)_kR^{12}$ or $S(O)_kNR^{12}R^{13}$;

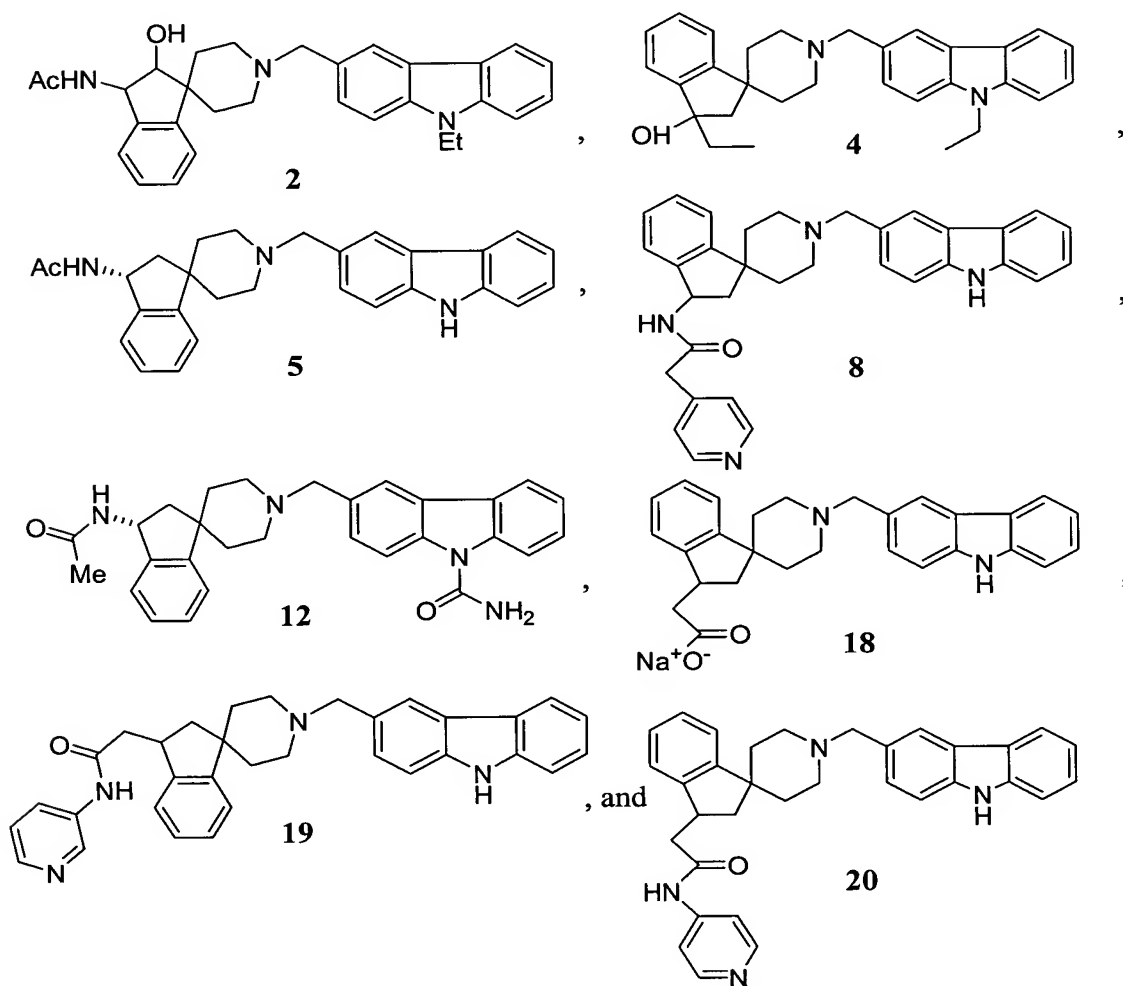
R^{12} and R^{13} independently represent H, (C_1-C_8) alkyl, (C_1-C_8) heteroalkyl, aryl (C_1-C_4) alkyl or aryl;

R^3 and R^4 independently represent H, (C_1-C_8) alkyl, hetero (C_1-C_8) alkyl, aryl, aryl (C_1-C_4) alkyl, $C(O)R'$, CO_2R' or $C(O)NR'R''$; and

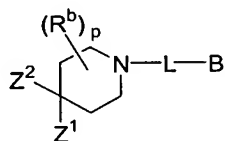
R' , R'' and R''' are independently selected from the group consisting of H, (C_1-C_8) alkyl, aryl and aryl (C_1-C_4) alkyl.

28. The compound of Claim 27, wherein R^{20} and R^{23} each represent H, R^{22} represents OH, and R^{21} represents $N(R^3)C(O)R^4$.
29. The compound of Claim 27, wherein R^{20} represents OH, and R^{22} and R^{23} each represent H, and R^{21} represents C_2 alkyl.
30. The compound of Claim 27, wherein R^{20} , R^{22} , and R^{23} each represent H and R^{21} represents $N(R^3)C(O)R^4$.
31. The compound of Claim 27, wherein R^{20} , R^{22} , and R^{23} each represent H and R^{21} represents $(CH_2)CO_2R^3$.

32. The compound of Claim 27, wherein R^{20} , R^{22} , and R^{23} each represent H and R^{21} represents $(CH_2)C(O)N(R^3)(R^4)$.
33. The compound of Claim 27, having a formula that is selected from the group consisting of:



34. A compound of formula (III):



III

wherein

B is selected from the group consisting of cyclo(C₅-C₈)alkyl, heterocyclo(C₅-C₈)alkyl, cyclo(C₅-C₈)alkenyl, heterocyclo(C₅-C₈)alkenyl, aryl and heteroaryl;

L is (C₁-C₄)alkylene;

Z¹ is selected from the group consisting of C(O)NR⁹R¹⁰, OR⁹, NC(O)R⁹, NSO₂R⁹ and NR⁹R¹⁰;

Z² is aryl or heteroaryl;

Each R^b is selected from the group consisting of (C₁-C₄)alkyl, aryl, OR⁷, C(O)R⁷ and C(O)NR⁷R⁸;

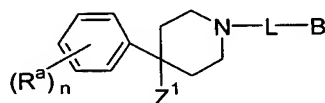
R⁷ and R⁸ are independently selected from the group consisting of H, (C₁-C₈)alkyl, hetero(C₁-C₈)alkyl, aryl, alkoxy, thioalkoxy and aryl(C₁-C₄)alkyl;

R⁹ and R¹⁰ are independently selected from the group consisting of H, (C₁-C₈)alkyl, (C₁-C₈)heteroalkyl, aryl(C₁-C₄)alkyl and aryl;

optionally, R⁹ and R¹⁰ may be combined with the nitrogen atom to which they are attached to form a 5-, 6- or 7-membered ring; and

the subscript p is an integer of from 0 to 4.

35. The compound of Claim 28, wherein the subscript p is 0.
36. The compound of Claim 28, wherein Z² is phenyl.
37. The compound of Claim 28, wherein Z² is phenyl and Z¹ is C(O)NR⁹R¹⁰.
38. The compound of Claim 28, having the formula (VI):



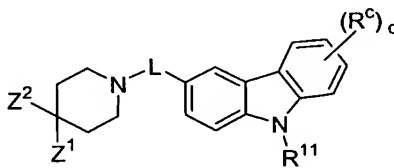
VI

wherein

each R^a is independently selected from the group consisting of halogen, halo(C₁-C₄)alkyl, (C₁-C₄)alkoxy, aryl(C₁-C₄)alkyl, OC(O)R¹⁷, NR¹⁷R¹⁸, SR¹⁷, cyano, nitro, CO₂R¹⁷, CONR¹⁷R¹⁸, C(O)R¹⁷, OC(O)NR¹⁷R¹⁸, NR¹⁸C(O)R¹⁷, NR¹⁸CO₂R¹⁷, NR¹⁹C(O)NR¹⁷R¹⁸, S(O)_kR¹⁷, S(O)_kNR¹⁷R¹⁸, N₃, (C₄-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, aryl and heteroaryl;

R^{17} , R^{18} and R^{19} are independently selected from the group consisting of H, (C₁-C₈)alkyl, (C₁-C₈)heteroalkyl, aryl(C₁-C₄)alkyl and aryl; and the subscript n is an integer of from 0 to 5.

39. The compound of Claim 28, having the formula (IX):



IX

wherein

R^{11} is selected from the group consisting of H, (C₁-C₄)alkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, (C₁-C₈)heteroalkyl, aryl, aryl(C₁-C₄)alkyl, heteroaryl, heteroaryl(C₁-C₄)alkyl, (C₃-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, (C₃-C₈)cycloalkyl-alkyl, (C₃-C₈)cycloheteroalkyl, (C₃-C₈)cycloheteroalkyl-alkyl, C(O) R^{12} , CO₂ R^{12} , C(O)NR¹² R^{13} , S(O)_k R^{12} and S(O)_kNR¹² R^{13} ;

each R^c is independently selected from the group consisting of (C₁-C₈)alkyl, (C₂-C₈)alkenyl, (C₂-C₈)alkynyl, (C₁-C₈)heteroalkyl, halo(C₁-C₈)alkyl, halogen, CN, NO₂, OR¹⁴, SR¹⁴, NR¹⁴ R^{15} , (C₃-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, (C₃-C₈)cycloalkyl-alkyl, (C₃-C₈)cycloheteroalkyl, (C₃-C₈)cycloheteroalkyl-alkyl, C(O) R^{14} , CO₂ R^{14} , C(O)NR¹⁴ R^{15} , aryl, aryl(C₁-C₄)alkyl, heteroaryl, heteroaryl(C₁-C₄)alkyl, S(O)_k R^{14} , S(O)_kNR¹⁴ R^{15} , N(R^{15})S(O)_k R^{14} , OC(O) R^{14} , OCO₂ R^{14} , OC(O)NR¹⁴ R^{15} , N(R^{16})C(O)NR¹⁴ R^{15} , N(R^{15})C(O) R^{14} and N(R^{15})CO₂ R^{14} ;

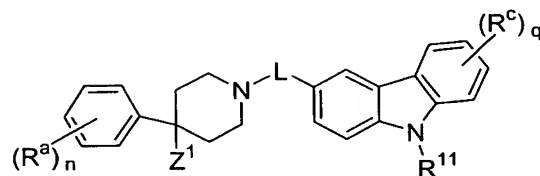
optionally, any two adjacent R^c groups may be combined to form a fused aryl ring or (C₅-C₈)cycloalkyl ring;

R^{12} , R^{13} , R^{14} , R^{15} and R^{16} are independently selected from the group consisting of H, (C₁-C₈)alkyl, (C₁-C₈)heteroalkyl, aryl(C₁-C₄)alkyl and aryl;

the subscript q is an integer of from 0 to 7; and

the subscript k is an integer of from 1 to 2.

40. The compound of Claim 38, having the formula (XII):



XII

wherein

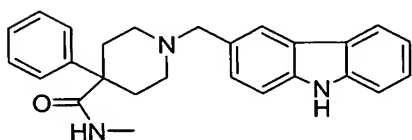
each R^a is independently selected from the group consisting of halogen, halo(C₁-C₄)alkyl, (C₁-C₄)alkoxy, aryl(C₁-C₄)alkyl, OC(O) R^{17} , NR¹⁷ R^{18} , SR¹⁷, cyano, nitro, CO₂ R^{17} , CONR¹⁷ R^{18} , C(O) R^{17} , OC(O)NR¹⁷ R^{18} , NR¹⁸C(O) R^{17} , NR¹⁸CO₂ R^{17} , NR¹⁹C(O)NR¹⁷ R^{18} , S(O)_k R^{17} , S(O)_kNR¹⁷ R^{18} , N₃, (C₄-C₈)cycloalkyl, (C₅-C₈)cycloalkenyl, aryl and heteroaryl;

R^{17} , R^{18} and R^{19} are independently selected from the group consisting of H, (C₁-C₈)alkyl, (C₁-C₈)heteroalkyl, aryl(C₁-C₄)alkyl and aryl;

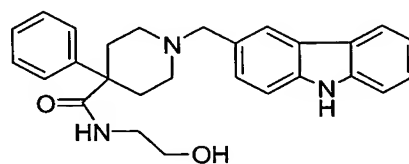
the subscript n is an integer of from 0 to 5; and

each subscript k is an integer of from 1 to 2.

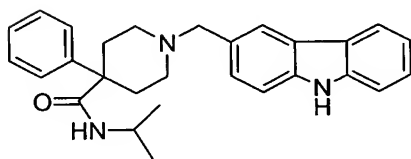
41. The compound of Claim 40, having a formula selected from the group consisting of:



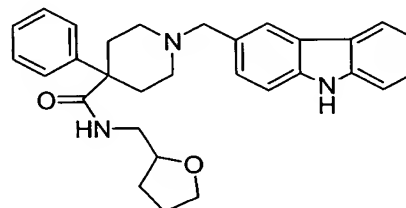
31



32



33



34

42. The compound of any one of Claims 25, 38 and 40, wherein L is methylene.

43. A pharmaceutical composition comprising a pharmaceutically acceptable carrier or excipient and a compound of Claim 1.
44. A method of treating a condition or disorder selected from the group consisting of obesity, diabetes, anorexia nervosa, bulimia, pain, cancers, asthma, Parkinson's disease, acute heart failure, congestive heart failure, hypotension, hypertension, urinary retention, osteoporosis, angina pectoris, myocardial infarction, stroke, ulcers, allergies, benign prostatic hypertrophy, migraine, vomiting, anxiety, schizophrenia, manic depression, depression, delirium, dementia, severe mental retardation, Huntington's disease, Gilles de la Tourette's Syndrome, Syndrome X, insulin resistance, hyperglycemia, hyperuricemia, hyperinsulinemia, hypercholesterolemia, hyperlipidemia, dyslipidemia, mixed dyslipidemia, hypertriglyceridemia, male sexual dysfunction, female sexual dysfunction, fever, inflammation, rheumatoid arthritis, atherosclerosis, Alzheimer's disease, epilepsy, autism, bipolar disorder, neuroses, substance abuse, generalized anxiety disorder, panic disorder, obsessive-compulsive disorder, posttraumatic stress syndrome, gall bladder disease, sleep apnea syndrome, narcolepsy, insomnia, Shy-Drager Syndrome, multiple sclerosis, dystonia, coronary artery disease, cardiomyopathy, cachexia, osteoarthritis, Prader-Willi Syndrome, hypothyroidism, hypogonadism, hyperprolactinemia, traumatic brain injury, ischemic reperfusion injury, aneurysm, spinal cord injury and Pickwick Syndrome, comprising administering to a subject in need thereof a therapeutically effective amount of a compound of Claim 1.
45. A method of treating a condition or disorder responsive to MCHR2 modulation, comprising administering to a subject in need thereof a therapeutically effective amount of a compound of Claim 1.
46. A method of treating an MCHR2-mediated condition or disorder, comprising administering to a subject in need thereof a therapeutically effective amount of a compound of Claim 1.

47. The method of Claim 45 or 46, wherein said condition or disorder is selected from the group consisting of obesity, diabetes, anorexia nervosa, bulimia, pain, cancers, asthma, Parkinson's disease, acute heart failure, congestive heart failure, hypotension, hypertension, urinary retention, osteoporosis, angina pectoris, myocardial infarction, stroke, ulcers, allergies, benign prostatic hypertrophy, migraine, vomiting, anxiety, schizophrenia, manic depression, depression, delirium, dementia, severe mental retardation, Huntington's disease, Gilles de la Tourette's Syndrome, Syndrome X, insulin resistance, hyperglycemia, hyperuricemia, hyperinsulinemia, hypercholesterolemia, hyperlipidemia, dyslipidemia, mixed dyslipidemia, hypertriglyceridemia, male sexual dysfunction, female sexual dysfunction, fever, inflammation, rheumatoid arthritis, atherosclerosis, Alzheimer's disease, epilepsy, autism, bipolar disorder, neuroses, substance abuse, generalized anxiety disorder, panic disorder, obsessive-compulsive disorder, posttraumatic stress syndrome, gall bladder disease, sleep apnea syndrome, narcolepsy, insomnia, Shy-Drager Syndrome, multiple sclerosis, dystonia, coronary artery disease, cardiomyopathy, cachexia, osteoarthritis, Prader-Willi Syndrome, hypothyroidism, hypogonadism, hyperprolactinemia, traumatic brain injury, ischemic reperfusion injury, aneurysm, spinal cord injury and Pickwick Syndrome.
48. The method of any one of Claims 44, 45 and 46, wherein said compound is administered in combination with a second therapeutic agent.
49. The method of Claim 48, wherein said second therapeutic agent is selected from the group consisting of an anti-obesity agent, an anti-diabetic agent, a non-steroidal antiinflammatory agent, an opioid analgesic, an antineoplastic agent, a cholesterol lowering agent, an antithrombotic agent, an anticonvulsant, an antipsychotic agent, a cholinesterase inhibitor, an anticholinergic agent, a dopaminergic agent, interferon β , a multiple sclerosis therapeutic agent, an anti-anxiety agent, an antidepressant, a phosphodiester V inhibitor, an α -2 adrenergic receptor antagonist and an MCHR1 antagonist.

50. A method of modifying feeding behavior, comprising administering to a subject an amount of a compound of Claim 1 effective to reduce or enhance food intake by the subject by at least 5%.
51. A method of reducing body mass, comprising administering to a subject an amount of a compound of Claim 1 effective to decrease the body mass of the subject by at least 5% of baseline.
52. The method of Claim 51, wherein the body mass of the subject is decreased by at least 10% of baseline.
53. A method of modulating MCHR2 in a cell, comprising contacting a cell with a compound of Claim 1.
54. A method for modulating MCHR2, comprising contacting a protein with a compound of Claim 1.
55. The method of Claim 54, wherein said compound is an MCHR2 antagonist.
56. A method for identifying a compound that modulates signal transduction, comprising
 - a)- contacting an isolated or recombinant MCHR2 polypeptide with a compound of Claim 1 under conditions suitable for MCHR2-mediated signal transduction;
 - b)- measuring intracellular Ca^{2+} , cAMP or IP_3 in the absence and presence of said compound; and
 - c)- comparing intracellular Ca^{2+} , cAMP or IP_3 levels in the absence and presence of said compound;wherein an increase or a decrease in intracellular Ca^{2+} , cAMP or IP_3 level in the presence of said compound indicates that said compound modulates signal transduction.

57. A method for identifying a compound that modulates signal transduction, comprising
- a)- contacting an isolated or recombinant MCHR2 polypeptide with an MCHR2 ligand in the absence and presence of a compound of Claim 1 under conditions suitable for G-protein coupling to said polypeptide;
 - b)- measuring G-protein activation in the absence and presence of said compound; and
 - c)- comparing G-protein activation in the absence and presence of said compound;
- wherein an increase or a decrease in G-protein activation in the presence of said compound indicates that said compound modulates signal transduction.
58. A method for identifying a compound that modulates MCHR2, comprising
- a)- contacting an isolated or recombinant MCHR2 polypeptide with an MCHR2 ligand in the absence and presence of a compound of Claim 1 under conditions suitable for ligand binding to said polypeptide;
 - b)- measuring ligand binding to said polypeptide in the absence and presence of said compound; and
 - c)- comparing ligand binding to said polypeptide in the absence and presence of said compound;
- wherein an increase or a decrease in ligand binding in the presence of said compound indicates that said compound modulates MCHR2.
59. A method for identifying a compound that modulates MCHR2, comprising
- a)- contacting a cell comprising a target gene that is activated by an MCHR2 ligand with a compound of Claim 1 under conditions suitable for transcription or expression of said target gene;

- b)- measuring the transcription or expression of said target gene in the absence and presence of said compound; and
- c)- comparing the transcription or expression of said target gene in the absence and presence of said compound;

wherein an increase or a decrease in transcription or expression in the presence of said compound indicates that said compound modulates MCHR2.

60. A method for identifying a compound that selectively modulates MCHR2, comprising

- a)- contacting an isolated or recombinant MCHR polypeptide with a compound of Claim 1 under conditions suitable for ligand binding to said MCHR;
- b)- measuring the binding affinities of said compound for said MCHR and for an MCHR2 polypeptide; and
- c)- comparing the binding affinities of said compound for said MCHR and for said MCHR2 polypeptide;

wherein a binding affinity for said MCHR2 polypeptide of at least 10-fold greater than the binding affinity for said MCHR indicates that said MCHR2 compound selectively modulates MCHR2.

61. The method of any one of Claims 57, 58, 59, and 60 wherein said compound that modulates MCHR2 is an MCHR2 antagonist.
62. A compound identified according to the method of any one of Claims 57, 58, 59 and 60.
63. A method for identifying a compound that modulates MCHR2, comprising
- a)- determining the binding mode of a compound of Claim 62 to MCHR2;

- b)- modifying said compound to provide a test compound that is capable of said binding mode;
- c)- contacting an isolated or recombinant MCHR2 polypeptide with an MCHR2 ligand in the absence and presence of said test compound under conditions suitable for ligand binding to said polypeptide;
- d)- measuring ligand binding to said polypeptide in the absence and presence of said test compound; and
- e)- comparing ligand binding to said polypeptide in the absence and presence of said test compound;

wherein an increase or a decrease in ligand binding in the presence of said test compound indicates that said test compound modulates MCHR2.